FCC PART 15.247

TEST REPORT

For

PURSPEC Technology (China) Ltd.

501 and 601, G4 Building, No.88 Jinjihu Avenue, Suzhou Industrial Park, Suzhou, Jiangsu, China

FCC ID: 2A9POO501P2025

Report Type:	**Product Name:**
Original Report	Omega Analyzer Lipid Analysis System

Report Number: RKSC250514001-00A

Report Date: 2025-07-25

Reviewed By: Bard Liu

Approved By: Kyle Xu

Prepared By:

Bay Area Compliance Laboratories Corp. (Kunshan)
No.248 Chenghu Road, Kunshan, Jiangsu Province, China
Tel: +86-512-86175000
Fax: +86-512-88934268
www.baclcorp.com.cn

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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	RKSC250514001-00A	R1V1	2025-07-25	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	PURSPEC Technology (China) Ltd.
Tested Model:	O-501P
Product Name:	Omega Analyzer Lipid Analysis System
Power Supply:	AC 100-240V
RF Function:	Zigbee
Maximum Output Power:	11.52 dBm
Operating Band /Frequency:	2405-2480 MHz
Modulation Type:	OQPSK
Channel Number:	16
Antenna Type:	External Omnidirectional Antenna
★Maximum Antenna Gain:	2.89 dBi

Note: The maximum antenna gain is provided by the applicant.

All measurement and test data in this report was gathered from production sample serial number: RKSC250514001-1 (Assigned by the BACL (Kunshan). The EUT supplied by the applicant was received on 2025-05-14.)

Objective

This report is prepared for *PURSPEC Technology (China) Ltd.* in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communications Commission rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices and FCC KDB 558074 D01 15.247 Meas Guidance v05r02.

Measurement Uncertainty

Item		Uncertainty
AC Power Lines Conducted Emissions		3.19dB
RF conducted test with spectrum		0.9dB
RF Output Power with Power meter		0.5dB
Radiated emissions	9 kHz~150 kHz	3.8dB
	150 kHz~30 MHz	3.4dB
	30MHz~1GHz	6.11dB
	1GHz~6GHz	4.45dB
	6GHz~18GHz	5.23dB
	18GHz~40GHz	5.65dB
Occupied Bandwidth		0.5kHz
Temperature		1.0℃
Humidity		6%

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu Province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) is accredited in accordance with ISO/IEC 17025:2017 by NVLAP (Lab code: 600338-0), and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No.: CN5055.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
11	2405	19	2445
12	2410	20	2450
13	2415	21	2455
14	2420	22	2460
15	2425	23	2465
16	2430	24	2470
17	2435	25	2475
18	2440	26	2480

EUT was tested with channel 11, 18, 25 and 26.

EUT Exercise Software

RF Test Tool: EMI_Test_Tool

Mode	★Power Level			
	2405 MHz	2440 MHz	2475 MHz	2480 MHz
Zigbee	-15.8	-15.8	-15.8	-19.2

Note: The power level was declared by the applicant.

Special Accessories

No special accessory.

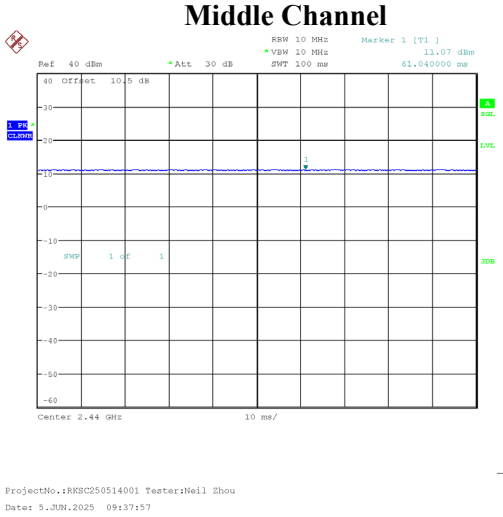
Equipment Modifications

No modification was made to the EUT tested.

Duty Cycle:

Test Date:	2025-06-05
Temperature:	24.1 ℃
Relative Humidity:	59 %
ATM Pressure:	101.1 kPa
Test Result:	Pass
Test Engineer:	Neil Zhou

Middle Channel



Mode	Duty Cycle (%)	T_{on}(ms)	T_{on+off}(ms)	10log(1/x)(dB)
Zigbee	100	100	100	0

Note:
1. “x” means the Duty Cycle.
2. Offset(10.5dB) = Attenuator(10dB)+Cable loss(0.5dB)

Support Equipment List and Details

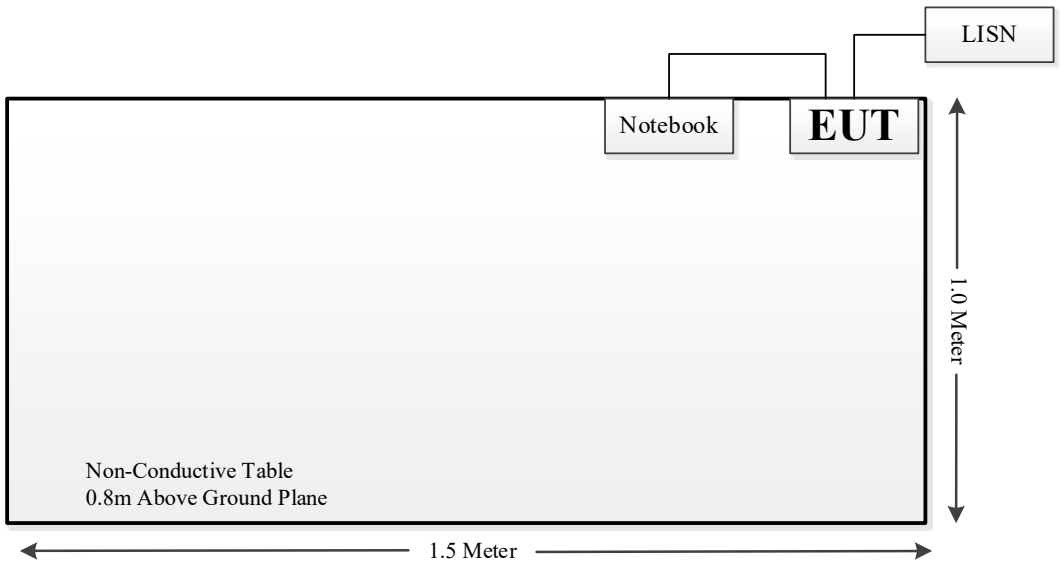
Manufacturer	Description	Model	Serial Number
Lenovo	Notebook	Y7000P2020H	Unknown

External I/O Cable

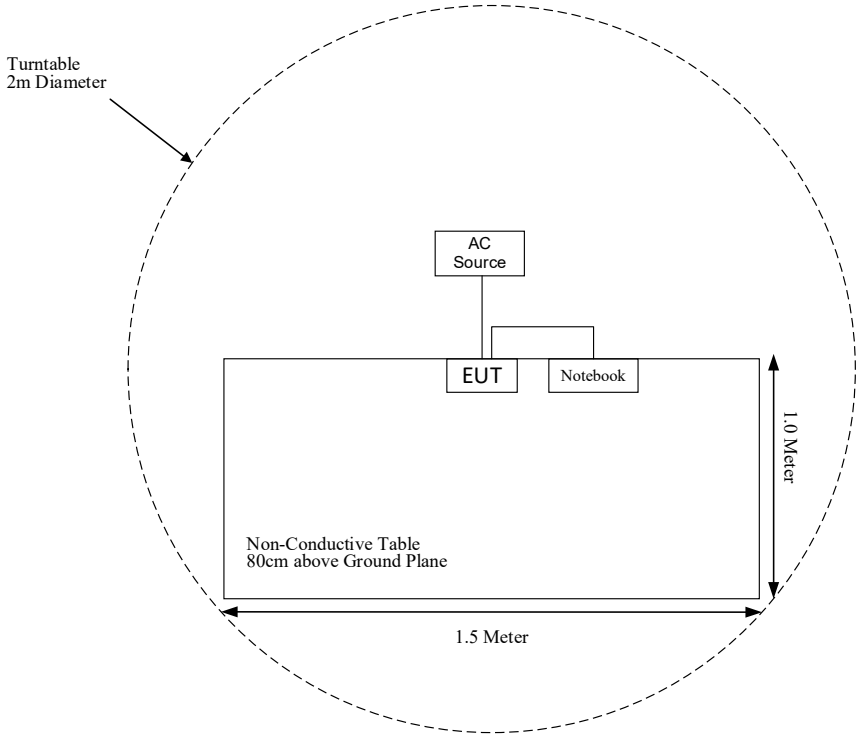
Cable Description	Length (m)	From Port	To Port
Power Cable	1.5	EUT	LISN/AC Source
USB Cable	1.0	EUT	Notebook

Block Diagram of Test Setup

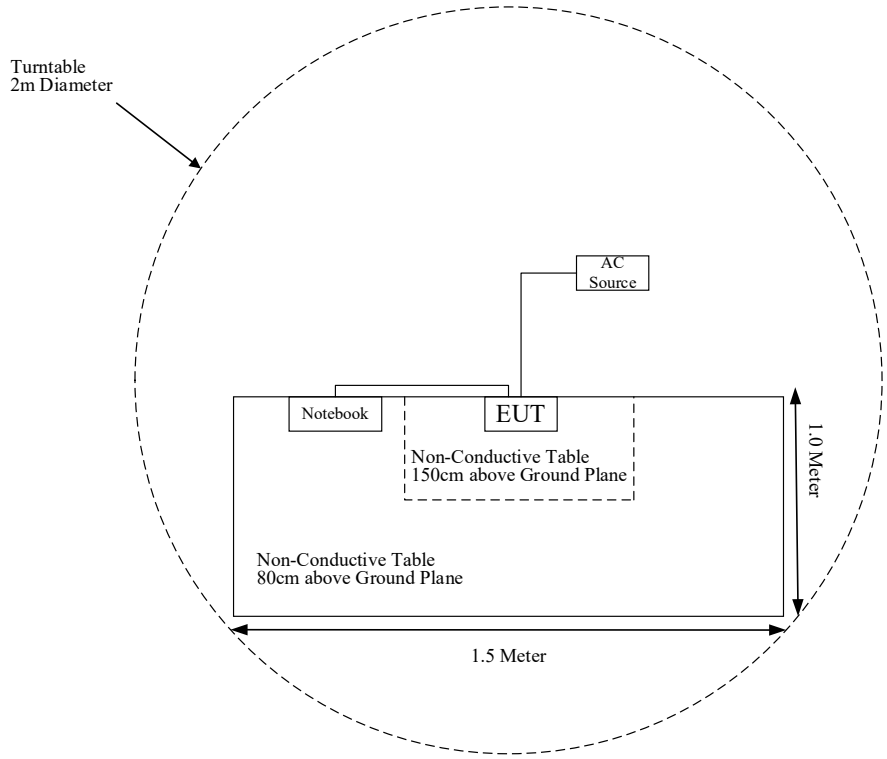
For Conducted Emissions:



For Radiated Emissions(Below 1 GHz):



For Radiated Emissions(Above 1 GHz):



TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test (Chamber #1)					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2025-04-09	2026-04-08
Sunol Sciences	Hybrid Antenna	JB3	A090314-2	2024-10-29	2027-10-28
BACL	Active Loop Antenna	1313-1A	4041511	2024-11-22	2027-11-21
Narda	6 dB Attenuator	771-6	10690812-2-1	2024-10-29	2027-10-28
Sonoma Instrument	Pre-amplifier	310N	171205	2025-04-09	2026-04-08
Rohde & Schwarz	Auto Test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-8	008	2025-04-09	2026-04-08
MICRO-COAX	Coaxial Cable	Cable-9	009	2025-04-09	2026-04-08
Radiated Emission Test (Chamber #2)					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207/040	2025-04-09	2026-04-08
ETS-LINDGREN	Horn Antenna	3115	9311-4159	2025-04-09	2026-04-08
ETS-LINDGREN	Horn Antenna	3116	2516	2024-12-12	2027-12-11
A.H.Systems,inc	Amplifier	PAM-0118P	512	2025-04-09	2026-04-09
MICRO-TRONICS	Band Reject Filter	BRM50702	G024	2025-04-09	2026-04-09
Narda	Attenuator	10dB	010	2025-04-08	2026-04-07
SELECTOR	Amplifier	EM18G40G	60726	2025-04-09	2026-04-08
Rohde & Schwarz	Auto test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-6	006	2025-04-09	2026-04-08
MICRO-COAX	Coaxial Cable	Cable-11	011	2025-04-09	2026-04-08
MICRO-COAX	Coaxial Cable	Cable-12	012	2025-04-09	2026-04-08
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	200103	2025-04-09	2026-04-08
Narda	Attenuator	20dB	020	2025-04-08	2026-04-07
XHFDZ	RG178 Coaxial Cable	SMA-178	XHF-1102	Each time	N/A
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	101746	2025-04-08	2026-04-07
Rohde & Schwarz	LISN	ENV216	101115	2025-04-08	2026-04-07
Audix	Test Software	e3	V9	N/A	N/A
Rohde & Schwarz	Pulse Limiter	ESH3-Z2	0357.8810.54	2025-04-08	2026-04-07
MICRO-COAX	Coaxial Cable	Cable-15	015	2025-04-09	2026-04-08

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310 & §2.1091	MAXIMUM PERMISSIBLE EXPOSURE (MPE)	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 (a)	AC Line Conducted Emissions	Compliant
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliant
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliant
§15.247(b)(3)	Maximum Conducted Output Power	Compliant
§15.247(d)	Band Edge	Compliant
§15.247(e)	Power Spectral Density	Compliant

FCC §1.1310 & §2.1091 –MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart §2.1091 and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

Mode	Frequency Range (MHz)	Antenna Gain		★Tune-up Output Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
Zigbee	2405-2480	2.89	1.95	12.0	15.85	20	0.0061	1.0

Note:
1. For the above tune up power were declared by the manufacturer.

Result: The device meet FCC MPE at 20 cm distance.

FCC §15.203 – ANTENNA REQUIREMENT

Applicable Standard

According to FCC § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Antenna Connector Construction

The EUT has an external omnidirectional antenna for Zigbee, and the antenna gain is 2.89 dBi, which use a unique type of connector to attach to the EUT, fulfill the requirement of this section. Please refer to the EUT photos.

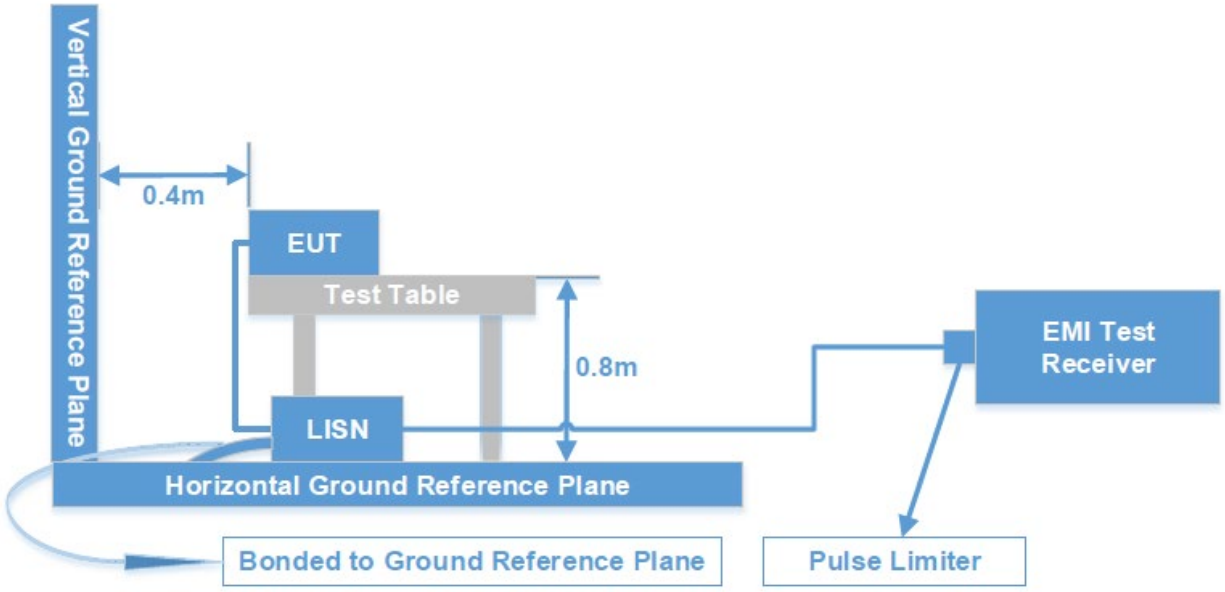
Result: Compliant.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

Test System Setup



The measurement procedure of EUT setup is according with ANSI C63.10-2013. The related limit was specified in FCC Part 15.207.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	VBW
150 kHz – 30 MHz	9 kHz	30 kHz

Test Procedure

ANSI C63.10-2013 clause 6.2

During the conducted emission test, the EUT was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

If the maximum peak value of the emissions is below the average limit, the QP value and average value measurement will not need to be performed and only record the maximum peak measured value to meet the requirements.

Level & Over Limit Calculation

The Level is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation from the Meter Reading. The basic equation is as follows:

Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
Level (dBμV) = Read level (dBμV) + Factor (dB)

The "**Over Limit**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit of 7 dB means the emission is 7 dB above the limit. The equation for Over Limit calculation is as follows:

Over Limit (dB) = Level (dBμV) - Limit (dBμV)

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207.

Test Data: See Appendix

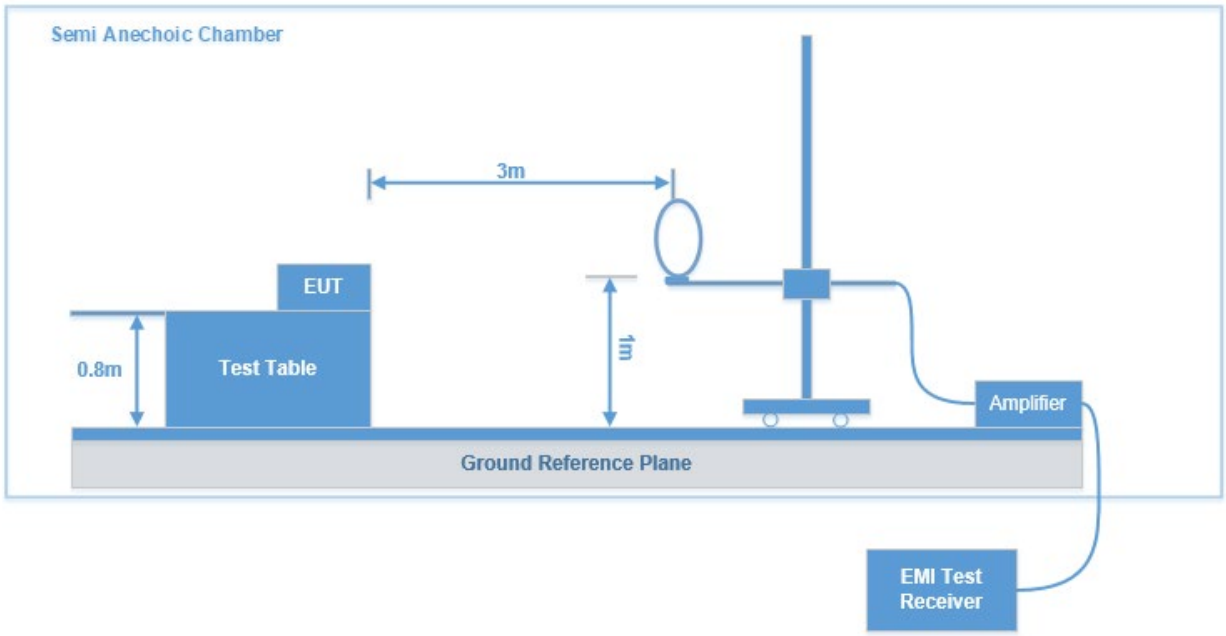
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

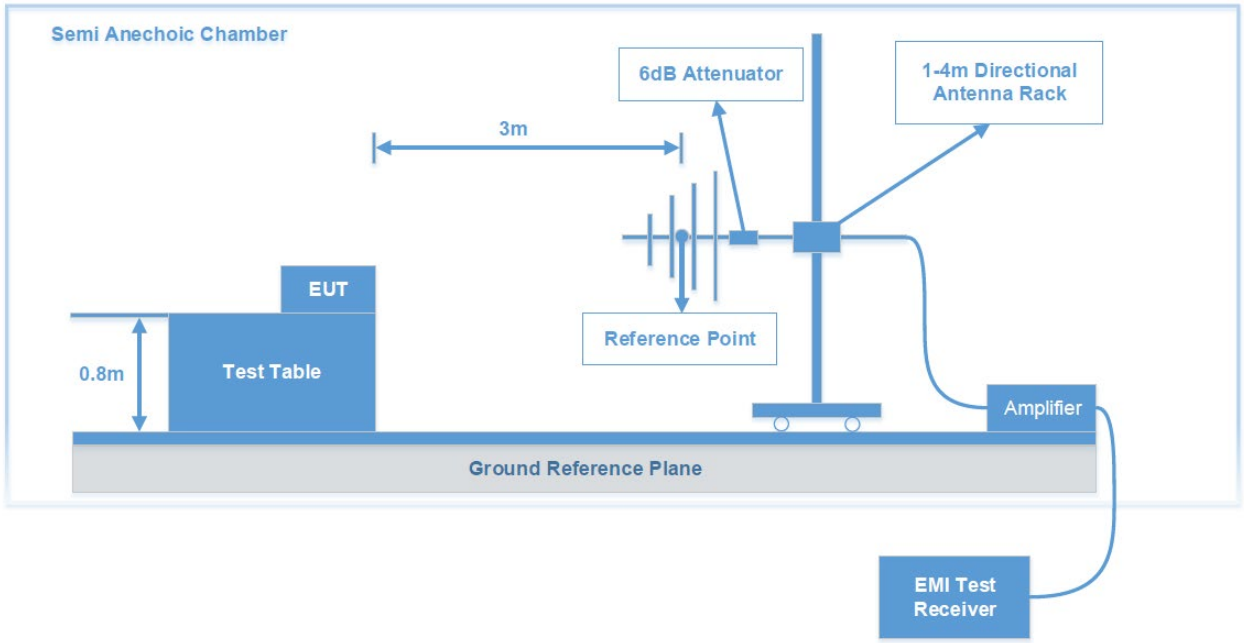
FCC §15.247 (d); §15.209; §15.205;

Test System Setup

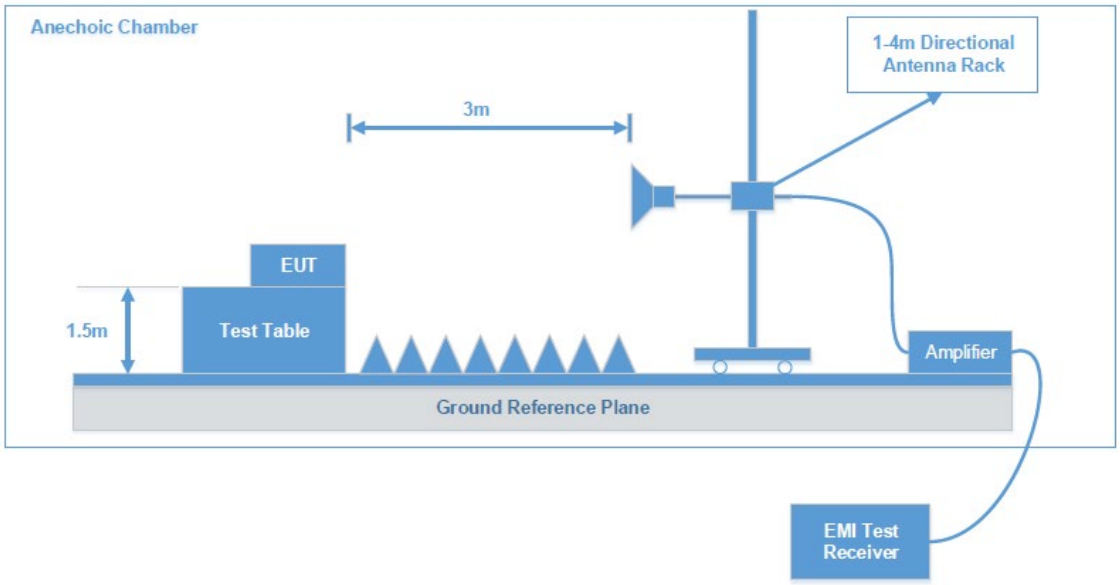
9 kHz - 30 MHz:



30 MHz - 1 GHz:



Above 1 GHz:



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 limits.

EMI Test Receiver Setup

The system was investigated from 9 kHz to 25 GHz.

During the radiated emission test, the EMI test receiver Setup was set with the following configurations:

Frequency Range	RBW	VBW	IF B/W	Measurement	Detector
9 kHz – 150 kHz	200 Hz	1 kHz	200 Hz	QP/Peake/Average	QP/Peake/Average
150 kHz – 30 MHz	9 kHz	30 kHz	9 kHz	QP/Peake/Average e	QP/Peake/Average
30 MHz – 1000 MHz	100 kHz	300 kHz	/	Peak	Peak
	/	/	120 kHz	QP	QP
Above 1GHz	1MHz	3 MHz	/	Peak	Peak
	1MHz	3 MHz	/	Average	Average

For 9 kHz-30 MHz test, the lowest height of the magnetic antenna shall be 1 m above the ground and three antenna orientations (parallel, perpendicular, and ground-parallel) shall be measured.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

If the measured peak level of the emissions that the measuring receiver reading level plus corrected factor is at least 6 dB below the QP emission limit, there's no need to record the measured QP level of the emissions in the report.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude (dBμV/m) = Meter Reading (dBμV) + Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)

The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Note: The QuasiPeak (dBμV/m), MaxPeak (dBμV/m), Average (dBμV/m) which shown in the data table are all Corrected Amplitude.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.247.

Test Data: See Appendix

FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

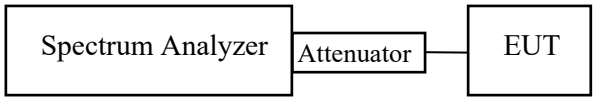
Applicable Standard

Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Procedure

According to ANSI C63.10-2013 sub-clause 11.8.1

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 * RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



Note: the offset=Attenuator (10dB) + Cable loss (0.5dB) has been added in Spectrum Analyzer.

Test Data: See Appendix

FCC §15.247(b) (3) - MAXIMUM CONDUCTED OUTPUT POWER

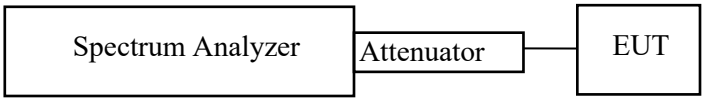
Applicable Standard

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

According to ANSI C63.10-2013 sub-clause 11.9.1.1

1. Set the RBW ≥ DTS bandwidth.
2. Set VBW ≥ 3 * RBW.
3. Set span ≥ 3 * RBW
4. Sweep time = auto couple.
5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use peak marker function to determine the peak amplitude level.



Note: the offset=Attenuator (10dB) + Cable loss (0.5dB) has been added in Spectrum Analyzer.

Test Data: See Appendix

FCC §15.247(d) – BAND EDGE

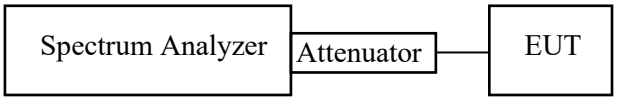
Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

According to ANSI C63.10-2013 sub-clause 6.10.

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.



Note: the offset=Attenuator (10dB) + Cable loss (0.5dB) has been added in Spectrum Analyzer.

Test Data: See Appendix

FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

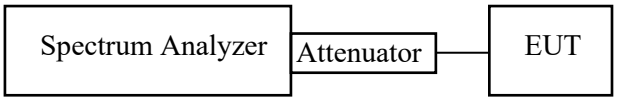
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Procedure

According to ANSI C63.10-2013 sub-clause 11.10.2

The following procedure shall be used if maximum peak conducted output power was used to determine compliance, and it is optional if the maximum conducted (average) output power was used to determine compliance:

1. Set the RBW to: 3kHz≤ RBW≤100 kHz.
2. Set the VBW ≥ 3*RBW.
3. Set the span to 1.5 times the DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level within the RBW.
9. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



Note: the offset=Attenuator (10dB) + Cable loss (0.5dB) has been added in Spectrum Analyzer.

Test Data: See Appendix

Appendix - TEST DATA

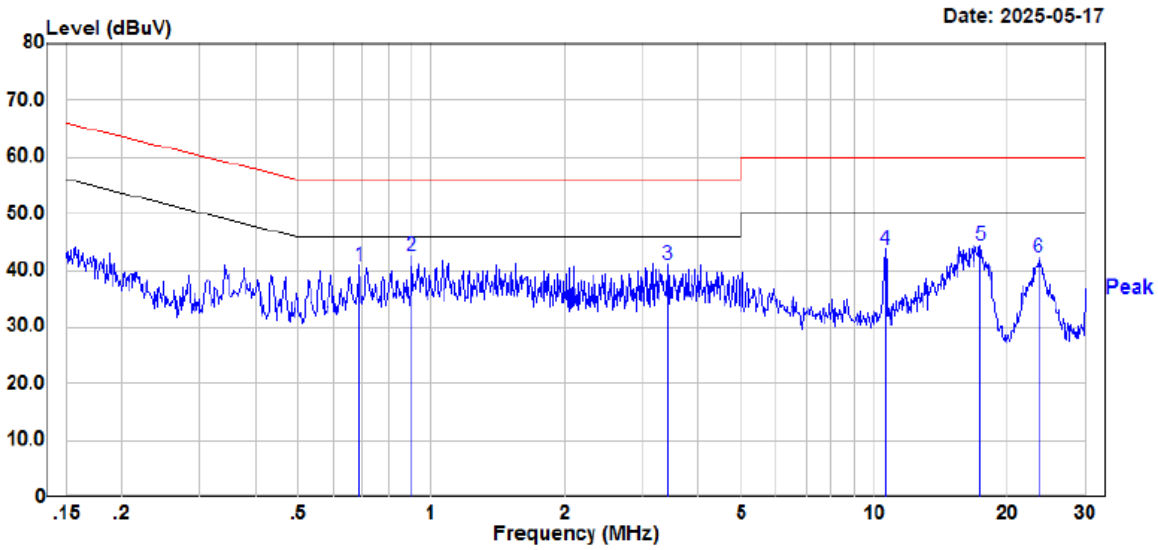
AC LINE CONDUCTED EMISSIONS

Environmental Conditions & Test Information

Test Date:	2025-05-17
Temperature:	24.9 ℃
Relative Humidity:	59 %
ATM Pressure:	101.0 kPa
Test Result:	Pass
Test Engineer:	Myles Miao

EUT operation mode: Transmitting in Zigbee low channel (maximum output power mode)

Line:

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Site                : CE
Condition           : FCC PART 15.207
                    : DET:Peak
Project No.         : RKSC250514001
Model               : O501P
Phase               : L
Voltage             : 120V/60Hz
Mode                : ZigBee
Test Equipment      : ENV216,ESR
Receiver Setting    : RBW: 9 kHz, VBW: 30 kHz, Sweep Time: Auto
Temperature         : 24.9℃
Humidity            : 59%
Atmospheric pressure: 101.0kPa
Test Engineer       : Myles Miao
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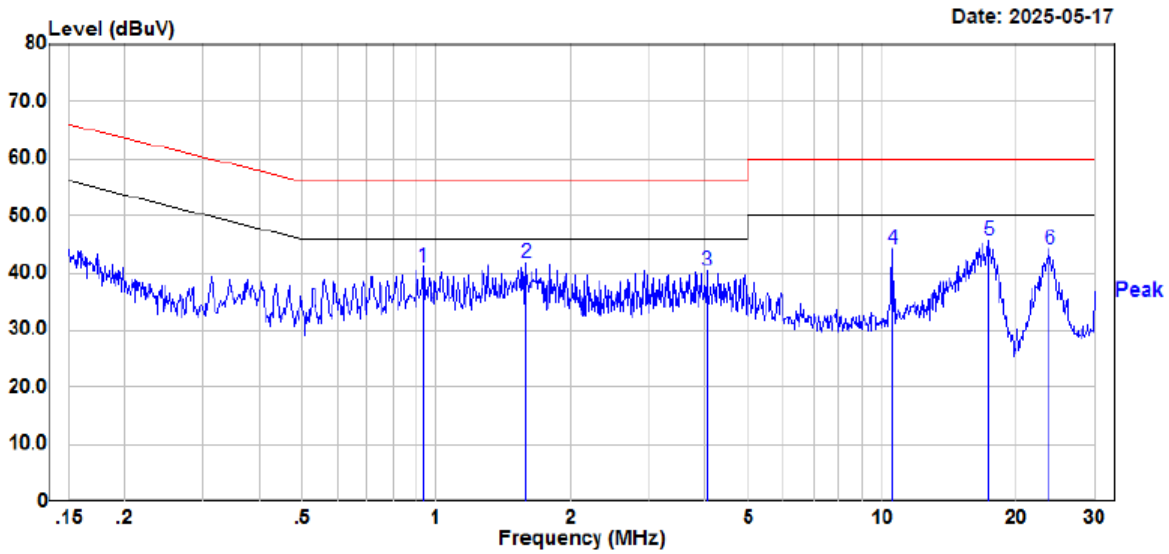
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.686	20.71	20.22	40.93	56.00	-15.07	Peak
2	0.902	22.74	19.84	42.58	56.00	-13.42	Peak
3	3.415	20.80	20.23	41.03	56.00	-14.97	Peak
4	10.585	23.90	19.92	43.82	60.00	-16.18	Peak
5	17.338	24.81	19.69	44.50	60.00	-15.50	Peak
6	23.499	22.52	19.76	42.28	60.00	-17.72	Peak

Neutral:




```
Site                : CE
Condition           : FCC PART 15.207
                    : DET:Peak
Project No.         : RKSC250514001
Model               : O501P
Phase               : N
Voltage             : 120V/60Hz
Mode                : ZigBee
Test Equipment      : ENV216,ESR
Receiver Setting    : RBW: 9 kHz, VBW: 30 kHz, Sweep Time: Auto
Temperature         : 24.9℃
Humidity            : 59%
Atmospheric pressure: 101.0kPa
Test Engineer       : Myles Miao
```

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.934	21.29	19.78	41.07	56.00	-14.93	Peak
2	1.585	21.74	19.99	41.73	56.00	-14.27	Peak
3	4.045	20.20	20.23	40.43	56.00	-15.57	Peak
4	10.533	24.23	19.92	44.15	60.00	-15.85	Peak
5	17.338	25.88	19.69	45.57	60.00	-14.43	Peak
6	23.735	24.52	19.76	44.28	60.00	-15.72	Peak

SPURIOUS EMISSIONS

Environmental Conditions & Test Information

Test Item:	9 kHz – 30 MHz	30 MHz – 1 GHz	1 GHz - 18 GHz	18 GHz - 25 GHz
Test Date:	2025-05-16	2025-05-16	2025-05-20 to 2025-06-19	2025-06-10
Temperature:	25.3 ℃	24.8 ℃	24.4 ℃	23.4 ℃
Relative Humidity:	58 %	70 %	52 %	75 %
ATM Pressure:	100.9 kPa	101.0 kPa	100.9 kPa	100.8 kPa
Test Result:	Pass	Pass	Pass	Pass
Test Engineer:	Jonathan	Jonathan	Danny	Hugh Wu

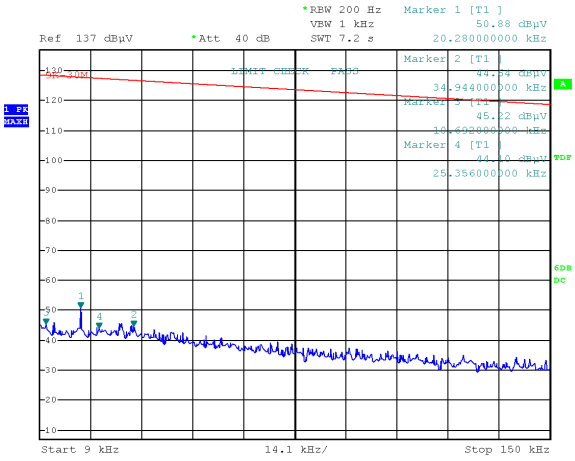
Test Result: Compliant.

EUT operation mode: Transmitting

9 kHz-30 MHz: *(Transmitting maximum output power Zigbee Mode low channel)*

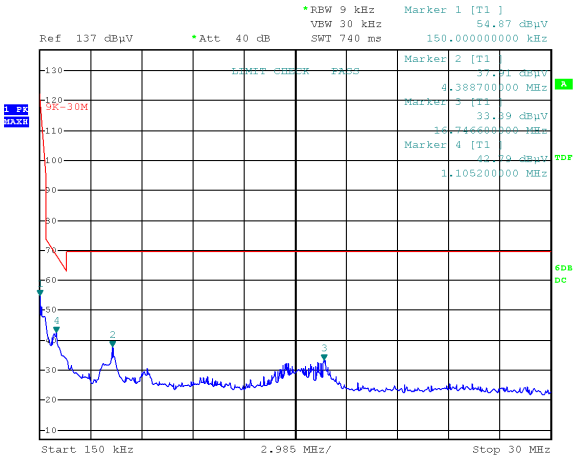
Parallel(worst case)

9 kHz-150 kHz



Project No.RKSA2505140001 Tester:Jonathan
Date: 16.MAY.2025 11:09:28

150 kHz-30 MHz



Project No.RKSA2505140001 Tester:Jonathan
Date: 16.MAY.2025 11:13:20

9 kHz - 150 kHz

Frequency (MHz)	Corrected Amplitude (dBµV/m) @3m	Detector PK/QP/Ave.	Corrected Factor (dB/m)	Limit (dBµV/m) @3m	Margin (dB)
0.010692	45.22	PK	-0.51	127.02	81.80
0.020280	50.88	PK	-0.56	121.46	70.58
0.025356	44.10	PK	-0.59	119.52	75.42
0.034944	44.54	PK	-1.40	116.74	72.20

150 kHz - 30 MHz

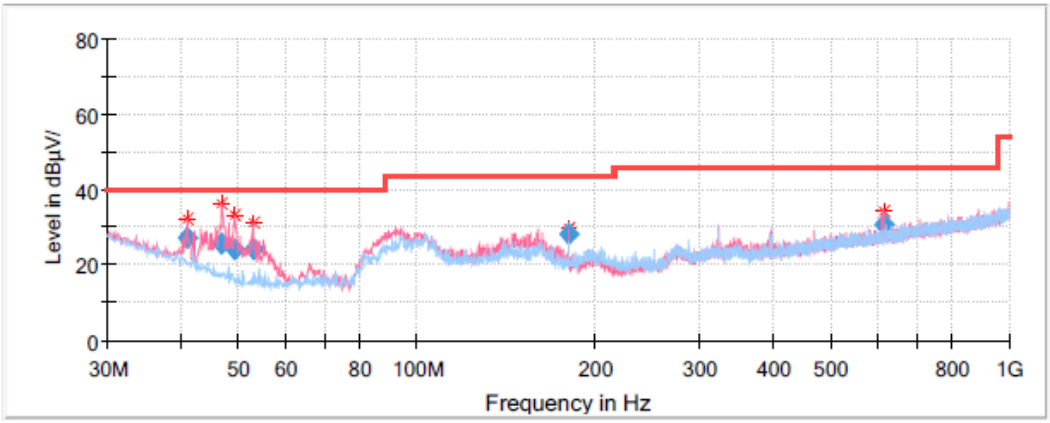
Frequency (MHz)	Corrected Amplitude (dBµV/m) @3m	Detector PK/QP/Ave.	Corrected Factor (dB/m)	Limit (dBµV/m) @3m	Margin (dB)
0.15000	54.87	PK	-11.34	104.08	49.21
1.10520	42.79	PK	-27.96	66.74	23.95
4.38870	37.91	PK	-31.99	69.54	31.63
16.74660	33.39	PK	-33.17	69.54	36.15

30 MHz-1 GHz (Transmitting in maximum output power low channel):

Low Channel: 2405 MHz

Common Information

Project No:	RKSC250514001
EUT Model:	O-501P
Test Mode:	Transmitting in ZigBee mode low channel
Standard:	FCC Part 15.205 &FCC Part 15.209&FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Receiver Setting:	RBW:100 kHz, VBW: 300 kHz, Sweep Time: Auto
Temperature:	24.8℃
Humidity:	70%
Barometric Pressure:	101.0kPa
Test Engineer:	Jonathan
Test Date:	2025/5/16



Final_Result

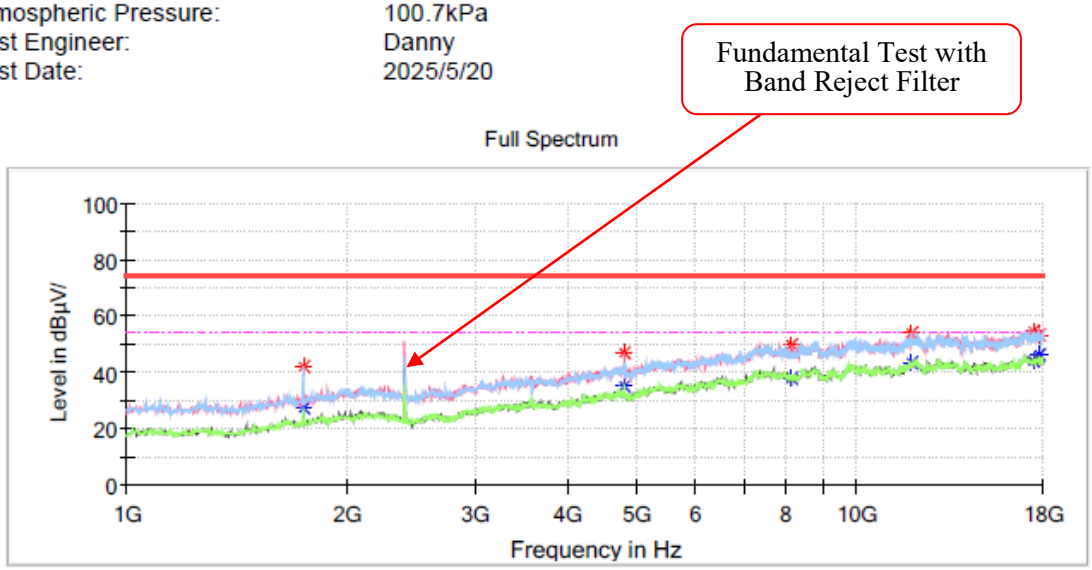
Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
40.912500	32.13	40.00	7.87	V	-11.8
46.853750	36.02	40.00	3.98	V	-15.2
49.036250	33.05	40.00	6.95	V	-16.4
52.795000	31.06	40.00	8.94	V	-17.0
179.986250	29.54	43.50	13.96	V	-12.9
612.121250	34.38	46.00	11.62	V	-3.8

1GHz-18GHz:

Low Channel: 2405 MHz

Common Information

Project No.:	RKSC250514001
EUT Model:	O-501P
Test Mode:	ZigBee
Standard:	FCC Part 15.247& FCC Part 15.205& FCC Part 15.209
Test Equipment:	ESU40,3115,PAM-0118P
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Temperature:	24.1℃
Humidity:	48%
Atmospheric Pressure:	100.7kPa
Test Engineer:	Danny
Test Date:	2025/5/20



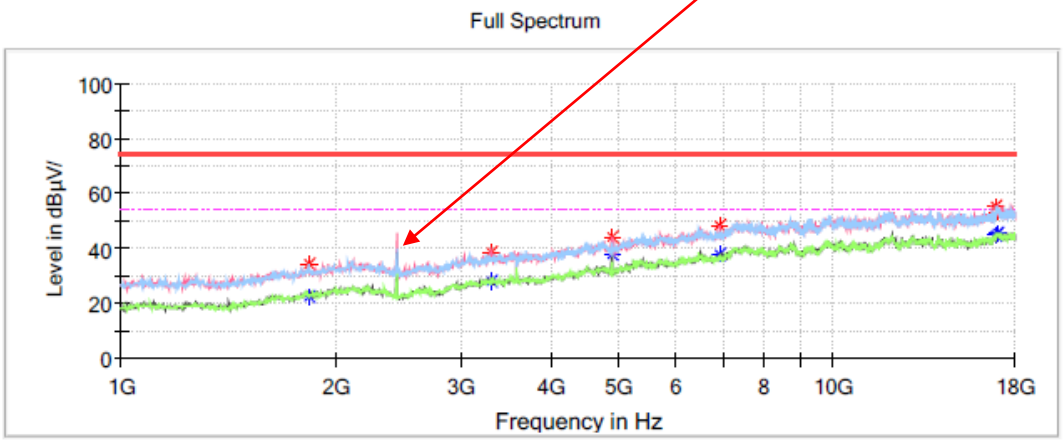
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1744.600000	---	27.53	54.00	26.47	H	-12.7
1744.600000	42.01	---	74.00	31.99	H	-12.7
4811.400000	47.12	---	74.00	26.88	V	-4.0
4811.400000	---	35.29	54.00	18.71	V	-4.0
8136.600000	---	38.10	54.00	15.90	V	3.3
8136.600000	49.43	---	74.00	24.57	V	3.3
11863.000000	---	43.15	54.00	10.85	H	7.9
11863.000000	54.14	---	74.00	19.86	H	7.9
17473.000000	---	44.02	54.00	9.98	V	10.5
17473.000000	54.58	---	74.00	19.42	V	10.5
17802.800000	---	46.01	54.00	7.99	V	11.2
17802.800000	53.48	---	74.00	20.52	V	11.2

Middle Channel: 2440 MHz

Common Information

Project No.:	RKSC250514001
EUT Model:	O-501P
Test Mode:	ZigBee
Standard:	FCC Part 15.247& FCC Part 15.205& FCC Part 15.209
Test Equipment:	ESU40,3115,PAM-0118P
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Temperature:	24.1℃
Humidity:	48%
Atmospheric Pressure:	100.7kPa
Test Engineer:	Danny
Test Date:	2025/5/20



Critical_Freqs

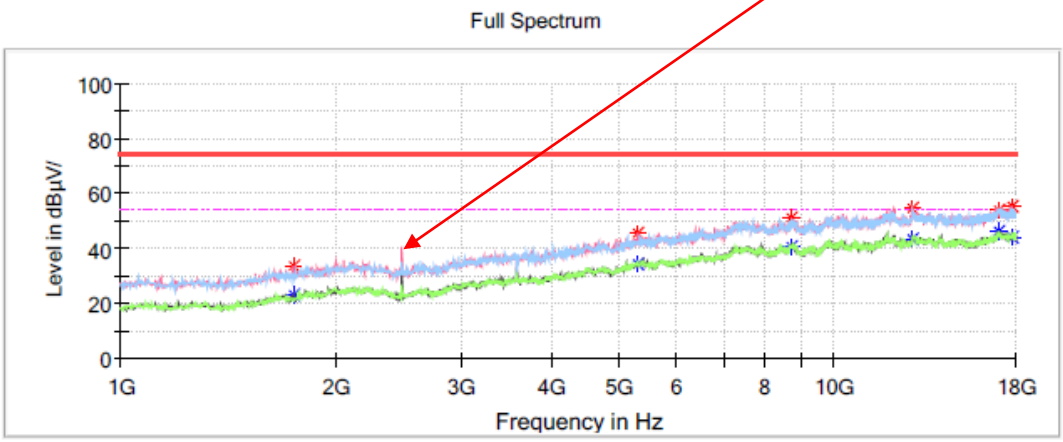
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1833.000000	---	22.71	54.00	31.29	H	-11.9
1833.000000	33.94	---	74.00	40.06	H	-11.9
3318.800000	---	27.74	54.00	26.26	V	-7.9
3318.800000	38.28	---	74.00	35.72	V	-7.9
4879.400000	---	37.43	54.00	16.57	V	-3.8
4879.400000	43.90	---	74.00	30.10	V	-3.8
6929.600000	---	37.84	54.00	16.16	V	1.4
6929.600000	48.48	---	74.00	25.52	V	1.4
16956.200000	---	44.93	54.00	9.07	H	11.1
16959.600000	55.52	---	74.00	18.48	H	11.1
17000.400000	53.30	---	74.00	20.70	H	11.3
17000.400000	---	45.73	54.00	8.27	H	11.3

High Channel: 2480 MHz

Common Information

Project No.:	RKSC250514001
EUT Model:	O-501P
Test Mode:	ZigBee
Standard:	FCC Part 15.247& FCC Part 15.205& FCC Part 15.209
Test Equipment:	ESU40,3115,PAM-0118P
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Temperature:	24.1℃
Humidity:	48%
Atmospheric Pressure:	100.7kPa
Test Engineer:	Danny
Test Date:	2025/5/20

Fundamental Test with Band Reject Filter



Critical_Freqs

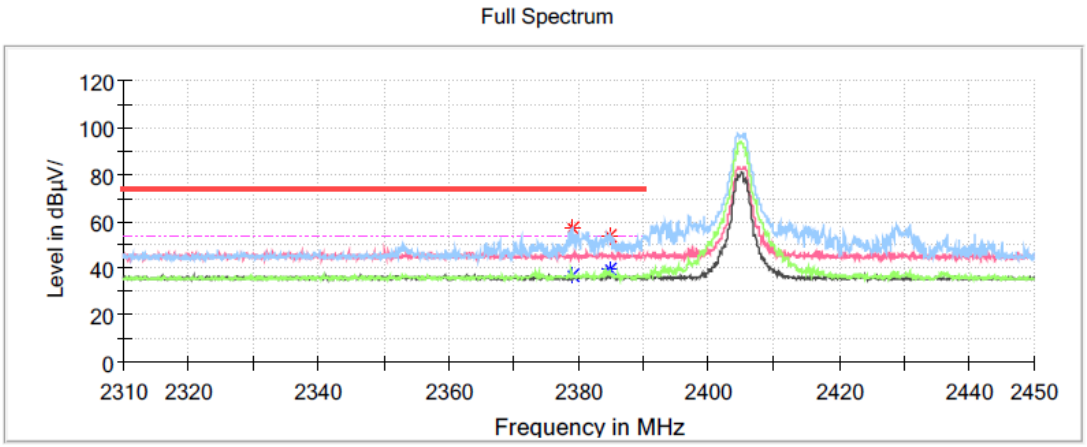
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1744.600000	---	22.99	54.00	31.01	V	-12.7
1744.600000	33.58	---	74.00	40.42	V	-12.7
5294.200000	---	34.22	54.00	19.78	V	-2.3
5294.200000	45.13	---	74.00	28.87	V	-2.3
8724.800000	---	40.25	54.00	13.75	V	4.4
8724.800000	50.87	---	74.00	23.13	V	4.4
12893.200000	---	43.51	54.00	10.49	V	8.7
12893.200000	54.25	---	74.00	19.75	V	8.7
17037.800000	---	46.28	54.00	7.72	H	11.2
17037.800000	53.94	---	74.00	20.06	H	11.2
17813.000000	---	44.37	54.00	9.63	V	11.3
17813.000000	54.90	---	74.00	19.10	V	11.3

Restricted Bands Emission:

Left Side

Common Information

Project No.:	RKSC250514001
EUT Model:	O-501P
Test Mode:	ZigBee
Standard:	FCC Part 15.247& FCC Part 15.205& FCC Part 15.209
Test Equipment:	ESU40,3115,PAM-0118P
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Temperature:	24.1℃
Humidity:	48%
Atmospheric Pressure:	100.7kPa
Test Engineer:	Danny
Test Date:	2025/5/20



Critical_Freqs

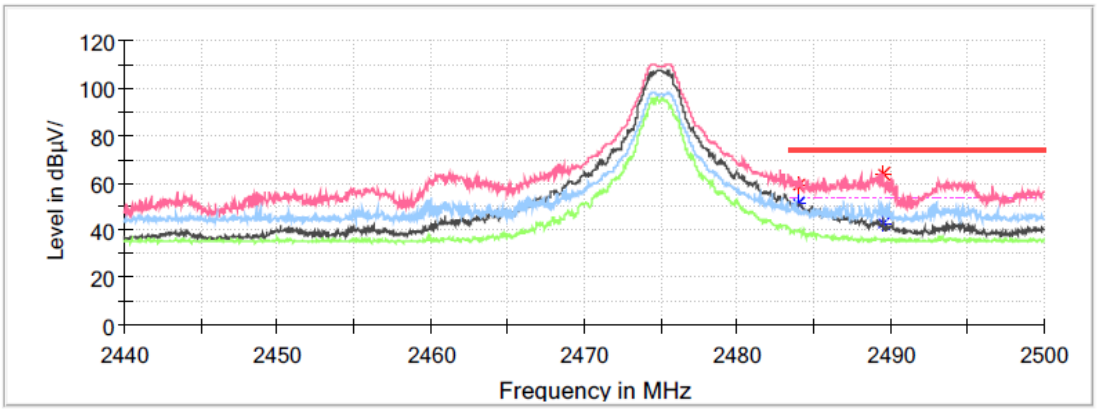
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2378.992000	57.09	---	74.00	16.91	H	-0.4
2378.992000	---	36.85	54.00	17.15	H	-0.4
2384.872000	53.54	---	74.00	20.46	H	-0.3
2384.872000	---	39.51	54.00	14.49	H	-0.3

Right Side (2475 MHz)

Common Information

Project No.:	RKSC250514001
EUT Model:	O-501P
Test Mode:	ZigBee
Standard:	FCC Part 15.247& FCC Part 15.205& FCC Part 15.209
Test Equipment:	ESU40,3115,PAM-0118P
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Temperature:	24.4℃
Humidity:	52%
Atmospheric Pressure:	100.9kPa
Test Engineer:	Danny
Test Date:	2025/6/19

Full Spectrum



Critical_Freqs

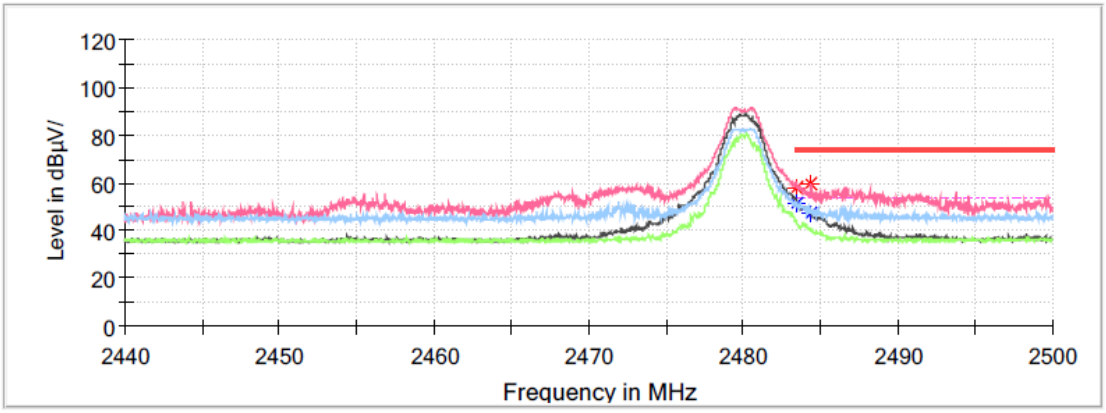
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2483.992000	59.06	---	74.00	14.94	V	-0.2
2483.992000	---	51.26	54.00	2.74	V	-0.2
2489.512000	63.57	---	74.00	10.43	V	-0.2
2489.512000	---	42.57	54.00	11.43	V	-0.2

Right Side (2480 MHz)

Common Information

Project No.:	RKSC250514001
EUT Model:	O-501P
Test Mode:	ZigBee
Standard:	FCC Part 15.247& FCC Part 15.205& FCC Part 15.209
Test Equipment:	ESU40,3115,PAM-0118P
Receiver Setting:	RBW: 1MHz, VBW: 3MHz, Sweep Time: Auto
Temperature:	24.1℃
Humidity:	48%
Atmospheric Pressure:	100.7kPa
Test Engineer:	Danny
Test Date:	2025/5/20

Full Spectrum

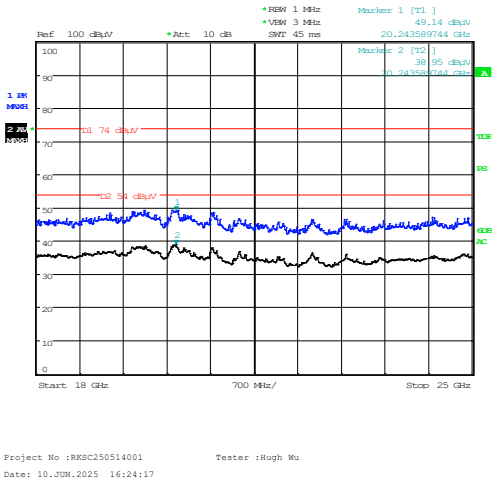


Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2483.512000	57.93	---	74.00	16.07	V	-0.2
2483.512000	---	51.11	54.00	2.89	V	-0.2
2484.400000	---	47.12	54.00	6.88	V	-0.2
2484.400000	59.53	---	74.00	14.47	V	-0.2

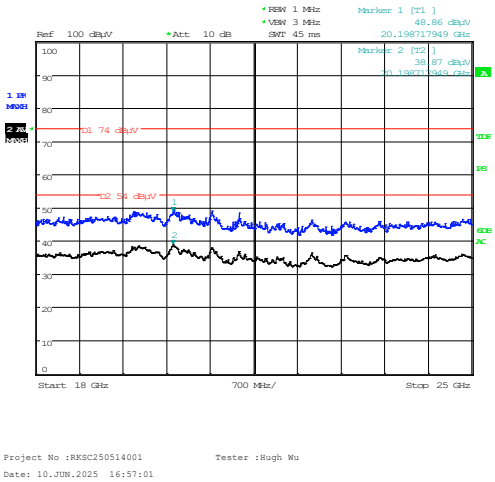
18 GHz - 25 GHz (Transmitting in maximum output power low channel):

Horizontal



Project No :RKSC250514001 Tester :Hugh Wu
Date: 10.JUN.2025 16:24:17

Vertical



Project No :RKSC250514001 Tester :Hugh Wu
Date: 10.JUN.2025 16:57:01

Frequency (GHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
20.20	---	38.87	54	15.13	V	12.46
20.20	48.86	---	74	25.14	V	12.46
20.24	---	38.95	54	15.05	H	12.5
20.24	49.14	---	74	24.86	H	12.5

Note: The test distance is 3m. The limit is 74dBµV/m(Peak) and 54dBµV/m(Average).

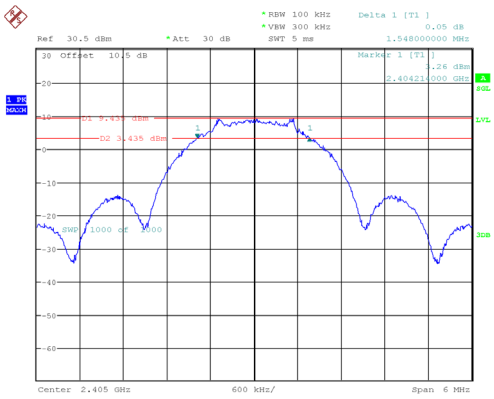
6 dB EMISSION BANDWIDTH

Environmental Conditions & Test Information

Test Date:	2025-06-05
Temperature:	24.1 ℃
Relative Humidity:	59 %
ATM Pressure:	101.1 kPa
Test Result:	Pass
Test Engineer:	Neil Zhou

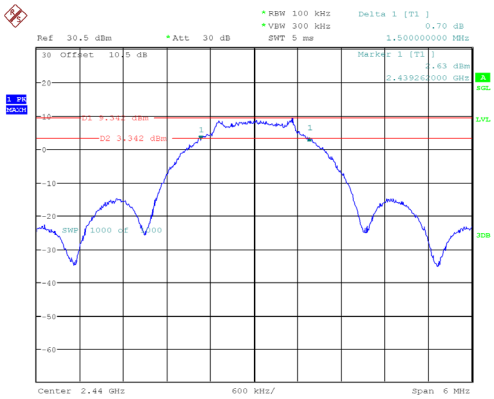
Mode	Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (MHz)
Zigbee	Low	2405	1.548	≥0.5
	Middle	2440	1.500	≥0.5
	High	2480	1.392	≥0.5

Low Channel



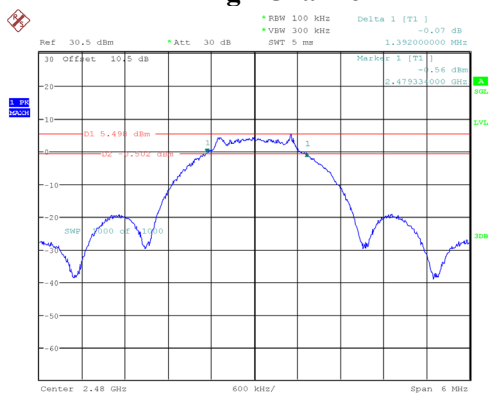
ProjectNo.:RKSC250514001 Tester:Neil Zhou
Date: 5.JUN.2025 09:27:46

Middle Channel



ProjectNo.:RKSC250514001 Tester:Neil Zhou
Date: 5.JUN.2025 09:38:32

High Channel



ProjectNo.:RKSC250514001 Tester:Neil Zhou
Date: 5.JUN.2025 09:47:24

MAXIMUM CONDUCTED OUTPUT POWER

Environmental Conditions & Test Information

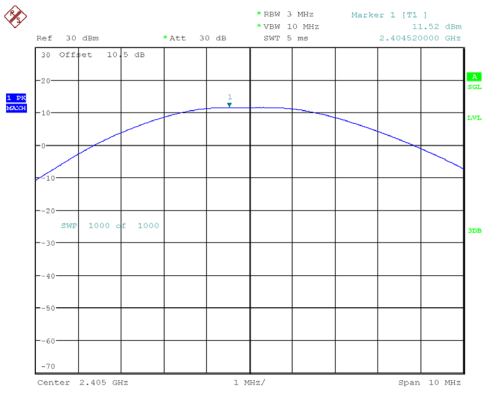
Test Date:	2025-06-05 to 2025-06-19
Temperature:	24.1-24.4 ℃
Relative Humidity:	52-59 %
ATM Pressure:	100.9-101.1 kPa
Test Result:	Pass
Test Engineer:	Neil Zhou

Test Result: Compliant.

EUT operation mode: Transmitting

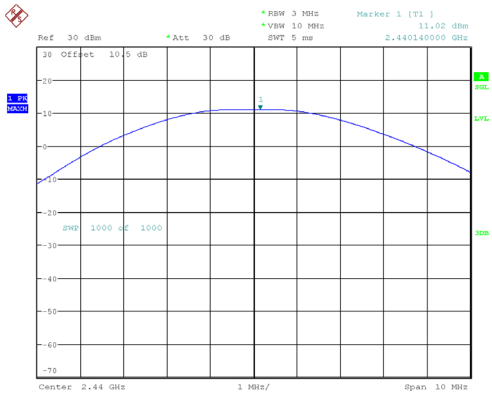
Mode	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Limit (dBm)	Result
Zigbee	2405	11.52	30	Pass
	2440	11.02	30	Pass
	2475	11.00	30	Pass
	2480	6.71	30	Pass

2405 MHz



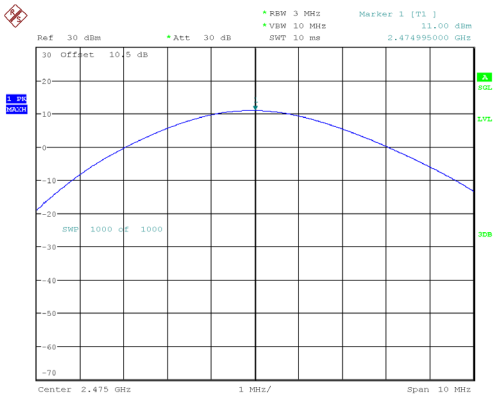
ProjectNo.:RKSC250514001 Tester:Neil Zhou
Date: 5.JUN.2025 09:29:48

2440 MHz



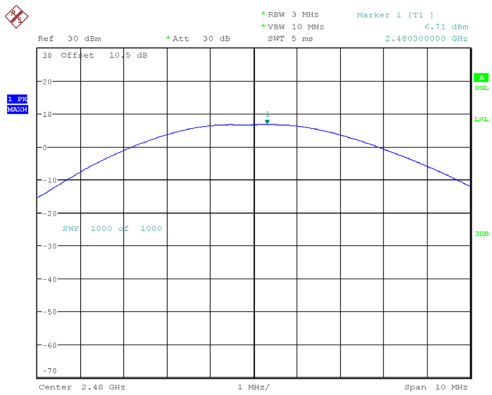
ProjectNo.:RKSC250514001 Tester:Neil Zhou
Date: 5.JUN.2025 09:39:40

2475 MHz



ProjectNo.:RKSC250514001 Tester:Neil Zhou
Date: 19.JUN.2025 13:39:44

2480 MHz



ProjectNo.:RKSC250514001 Tester:Neil Zhou
Date: 5.JUN.2025 09:48:37

BAND EDGE

Environmental Conditions & Test Information

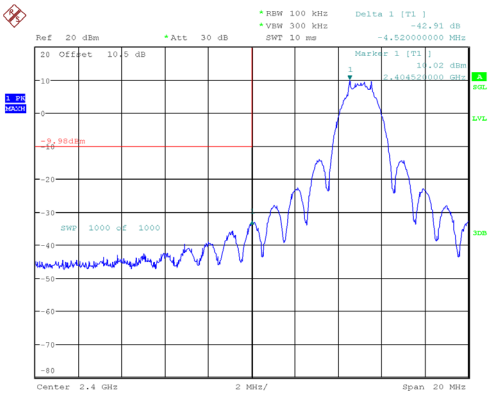
Test Date:	2025-06-05
Temperature:	24.1 ℃
Relative Humidity:	59 %
ATM Pressure:	101.1 kPa
Test Result:	Pass
Test Engineer:	Neil Zhou

Test Result: Compliant.

EUT operation mode: Transmitting

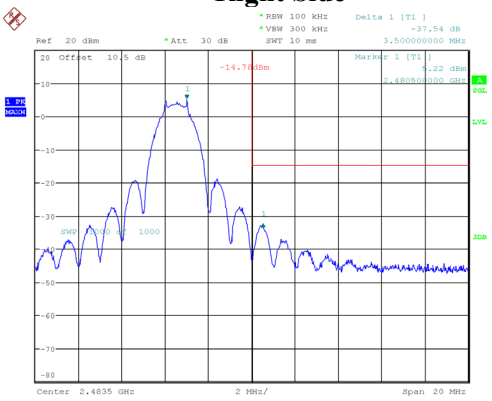
Mode	Channel	Frequency (MHz)	Result (dBc)	Limit (dBc)
Zigbee	Low	2405	42.91	20
	High	2480	37.54	

Left Side



ProjectNo.:RKSC250514001 Tester:Neil Zhou
Date: 5.JUN.2025 09:30:46

Right Side



ProjectNo.:RKSC250514001 Tester:Neil Zhou
Date: 5.JUN.2025 09:49:35

POWER SPECTRAL DENSITY

Environmental Conditions & Test Information

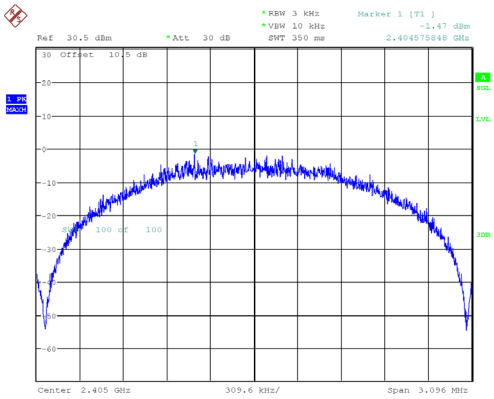
Test Date:	2025-06-05
Temperature:	24.1 ℃
Relative Humidity:	59 %
ATM Pressure:	101.1 kPa
Test Result:	Pass
Test Engineer:	Neil Zhou

Test Result: Compliant.

EUT operation mode: Transmitting

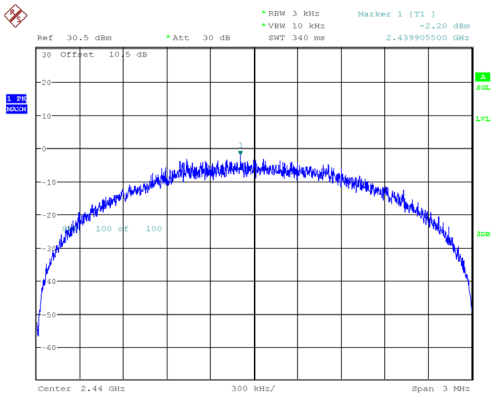
Mode	Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
Zigbee	Low	2405	-1.47	≤8
	Middle	2440	-2.20	≤8
	High	2480	-5.76	≤8

Low Channel



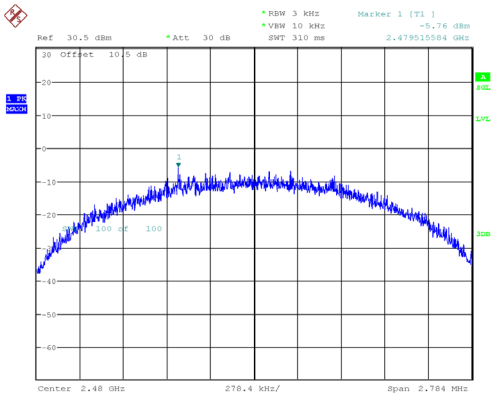
ProjectNo.:RKSC250514001 Tester:Neil Zhou
Date: 5.JUN.2025 09:32:12

Middle Channel



ProjectNo.:RKSC250514001 Tester:Neil Zhou
Date: 5.JUN.2025 09:40:23

High Channel



ProjectNo.:RKSC250514001 Tester:Neil Zhou
Date: 5.JUN.2025 09:50:16

EUT PHOTOGRAPHS

Please refer to the attachment EXHIBIT A - EUT EXTERNAL and EXHIBIT B - EUT INTERNAL PHOTOGRAPHS.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment EXHIBIT C - TEST SETUP PHOTOGRAPHS.

Declarations

1. The laboratory is not responsible for the authenticity of any information provided by the applicant. Information from the applicant that may affect test results is marked with "★".

2. The test data was only valid for the test sample(s).

3. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

4. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

5. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor k=2 with the 95.45% confidence interval.

******* END OF REPORT *******